



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE BRYOLOGIST

VOL. XXI

JANUARY, 1918

No. 1

THE RHACOMITRIUMS OF WESTERN NORTH AMERICA

[Concluded]

T. C. FRYE

4. *RHACOMITRIUM CYCLODICTYON* Card. & Ther. Proc. Wash. Acad. Sci. 4: 308. 1902.

Plants densely caespitose, small, blackish-brown or reddish-brown. Stems depressed, 6 cm. or less long, pinnately much-branched; branches crowded, erect, short, 3-5 mm. long; short tuft-like lateral branches wholly wanting. Leaves when dry suberect, hardly flexuous; when moist erecto-patent; up to 1.25 mm. long, up to .5 mm. wide, ovate-lanceolate, mucous; margin entire, revolute below, only 1 cell thick throughout; vein somewhat slender, 35-40 μ

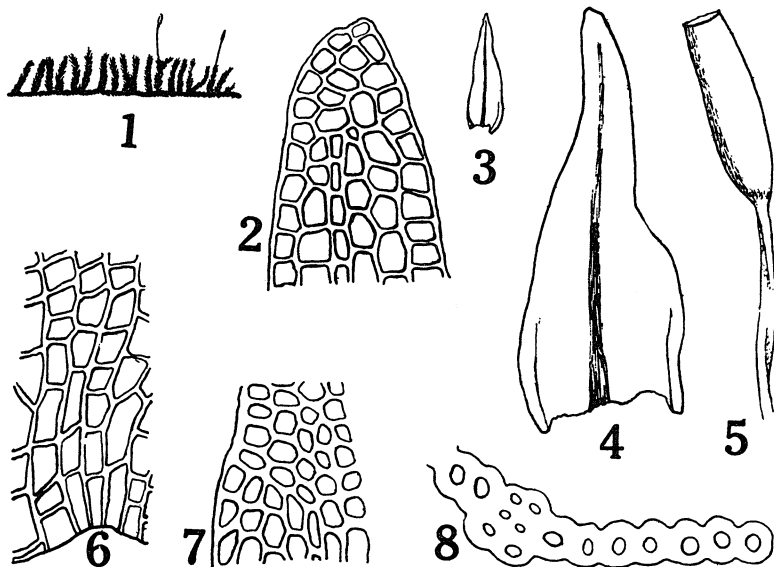


PLATE I

Rhacomitrium cyclodictyon. (1) Plant, X1. (2) Leaf-tip, X400. (3) Leaf, X17. (4) Leaf, X90. (5) Capsule, X17. (6) Cells of leaf-base, X400. (7) Cells of leaf-middle, X400. (8) Part cross section of leaf near its tip, X400.

The November number of *THE BRYOLOGIST* was published December 5, 1917.

thick, vanishing below the apex, its cells in cross section subequal. Cells of leaf-base near the vein somewhat rectangular or sublinear, not sinuose; cells of leaf-tip and leaf-middle round or short-ovate, $8-12\mu$ wide, incrassate at the side, smooth but convex on both sides of the leaf, very strongly convex on the upper side. Perichaetial leaves much larger than the others, at base somewhat subvaginate, long-acuminate, erect when moist. Seta short, purple but finally blackish, twisted to the right when dry, about 5 mm. long. Capsule erect, narrowly cylindric, 1.5 mm. long, .3 mm. in diameter. Spores minutely granulose, $16-17\mu$ in diameter. Otherwise unknown.—Known only from Muir Glacier, Alaska.

Type material was kindly lent by the Missouri Botanical Garden. It contained only 2 capsules, both mature, without teeth. There was no mature calyptra nor lid. Cardot & Theriot evidently also lacked these. There is some doubt whether it is a *Rhacomitrium* at all. The leaf-cells look more like those of *Grimmia*, but the capsule is rather long for that genus. The final disposition of the plant will likely have to await specimens with peristome.

5. RHACOMITRIUM HETEROSTICHUM (Hedw.) Brid. Mant. p. 79. 1819.

Plants green to grayish-green. Stems up to 6 cm. long; elongated branches none to few per plant, short tuft-like lateral branches none to fairly common.

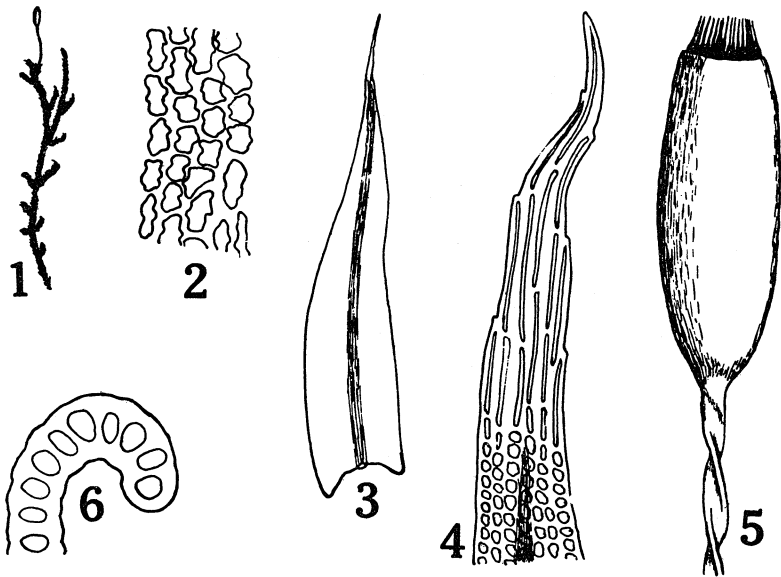


PLATE II

Rhacomitrium heterostichum. (1) Plant, $\times 1$. (2) Cells of leaf-middle, $\times 400$. (3) Leaf, $\times 17$. (4) Leaf-tip, $\times 200$. (5) Capsule, $\times 17$. (6) Cross section of margin in upper part of leaf, $\times 550$.

Leaves lanceolate, about 2.4 mm. long, loosely appressed when dry, recurved when moist, nearly all hyaline pointed; surfaces nearly smooth; margin 1 cell thick throughout. Cells of leaf-tip isodiametric, of leaf-middle rectangular, of leaf-base linear. Dioicous. Calyptra somewhat rough on the beak. Seta 5-8 mm. long, twisted to the right. Capsule erect, cylindric or almost club-shaped, its body 2-2.4 mm. long; lid half as long as capsule-body, its beak straight; annulus of 2-3 rows of cells. Peristome-teeth .25-.45 mm. long, densely papillose, split to the base into 2 divisions. Spores 14-18 μ in diameter.—Alaska and Yukon to Oregon and Colorado.

R. heterostichum together with *R. sudeticum*, *R. affine* and *R. macounii* constitute a very closely related group. It is doubtful whether the last 3 named are sufficiently distinct from *R. heterostichum* to merit specific rank. All differ from *R. heterostichum* in having the margin in the upper part of the leaf more than 1 cell thick.

6. RHACOMITRIUM SUDETICUM (Funk) B. S. G. Bryol. Eur., fasc. 25-28. 1845.

Plants green to blackish-green. Stems up to 15 cm. long; elongated branches few, short tuft-like lateral branches none to few. Leaves lanceolate, almost smooth, mostly with short denticulate hyaline points with or without surface denticulations; margin 2 cells thick at least in the upper part of the leaf. Cells of the leaf-tip round-quadrangle, those below the leaf-middle gradually longer, of the leaf-base linear; marginal row at base quadrangle to rectangular, almost hyaline. Dioicous. Seta 2-3 mm. long, twisted to the right. Capsule erect, oval, smooth, its body 1.2-1.5 mm. long; lid about $\frac{3}{4}$ the length of the capsule-body, straight-beaked. Peristome-teeth about .4 mm. long, densely papillose. Spores 10-18 μ in diameter.

Macoun's numbers 156 from McLeod Lake, and 404 and 405 from Rogers Pass, distributed as *R. affine*, are referred here.

TYPICAL.

1. None of the leaves with denticulations on the surface of the hyaline points.
—Alaska and Yukon to Oregon and Idaho.

6a. *Rhacomitrium sudeticum occidentale* (R. & C.) n. comb. [*R. heterostichum occidentale* R. & C. Bot. Gaz. 15: 41, 1890; *R. occidentale* R. & C.; *R. brevipes* Kindb.; *R. micropus* Kindb.]

1. At least some of the leaves with denticulations on the surface of the hyaline points.—British Columbia to Oregon.

The surface denticulations seem to constitute about the only distinction that one can depend upon to separate the variety, and even that leaves one in doubt at times. The leaf-margin is 2 cells thick toward the tip. This removes it from *R. heterostichum* and allies it with the other members of this complex. It lacks the short tuft-like lateral branches of *R. affine*, and its leaf-tips are much more like those of *R. sudeticum* than like those of *R. macounii*. It is therefore placed as a variety of *R. sudeticum*. It might be recognized as a species; but the writer is inclined to believe that it, *R. sudeticum*, *R. affine*, and *R. macounii* are all largely if not entirely environmental forms of the same thing.

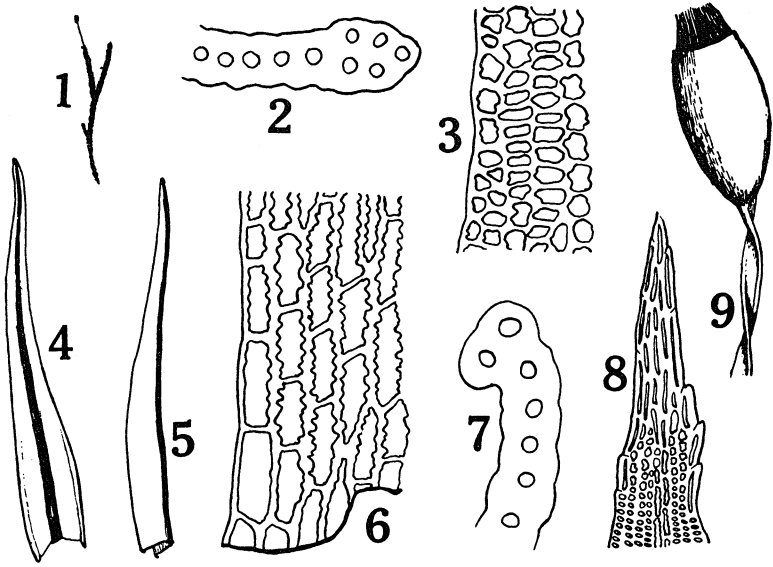


PLATE III

Rhacomitrium sudeticum. (1) Plant, $\times 1$. (2) Cross section of leaf-margin near tip, $\times 550$. (3) Cells of leaf-middle, $\times 400$. (4), (5) Leaves, $\times 17$. (6) Cells of leaf-base, $\times 400$. (7) Cross section of leaf-margin between tip and middle, $\times 550$. (8) Leaf-tip, $\times 200$. (9) Capsule, $\times 17$.

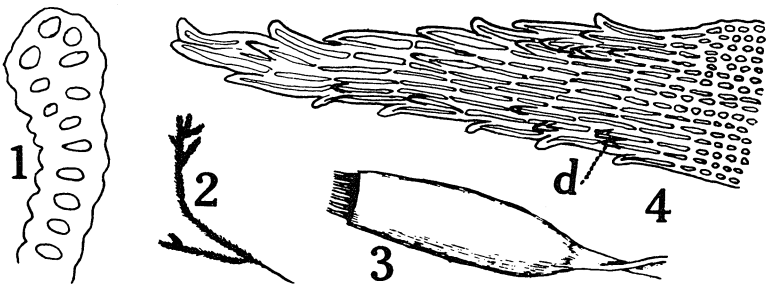


PLATE IV

Rhacomitrium sudeticum occidentale. (1) Cross section of leaf-margin near tip, $\times 550$. (2) Plant, $\times 17$. (3) Capsule, $\times 17$. (4) Leaf-tip; (d) Surface denticulation, $\times 200$.

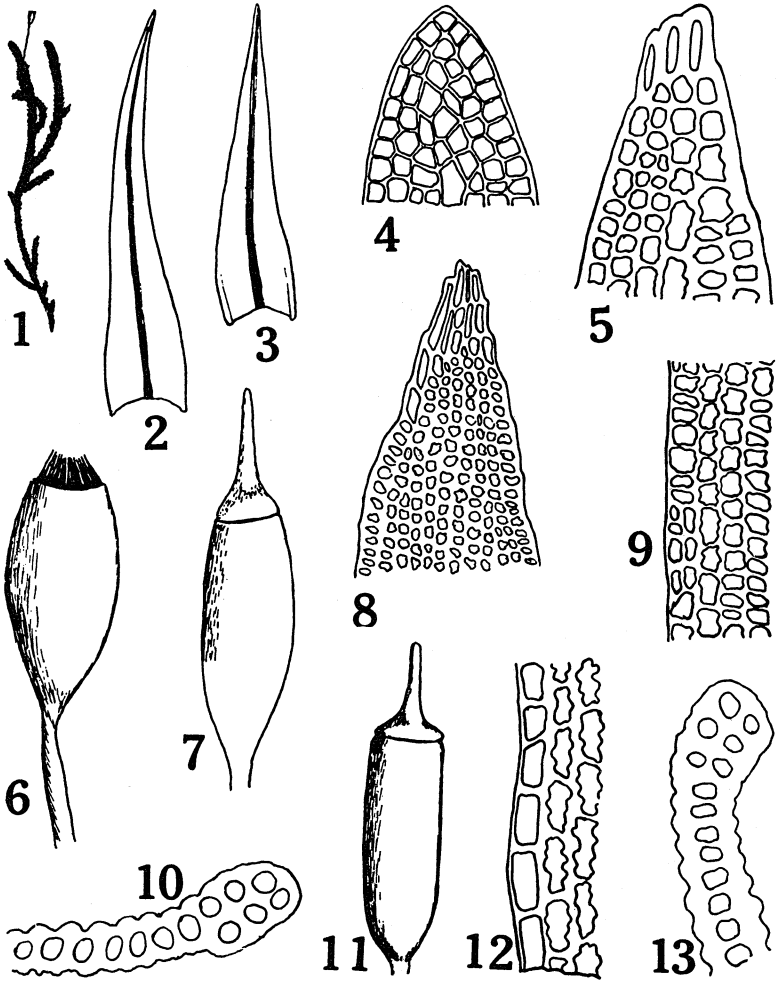


PLATE V

Rhacomitrium macounii. (1) Plant, $\times 1$. (2), (3) Leaves, $\times 17$. (4) Leaf-tip without hyaline point, $\times 400$. (5) Leaf-tip with hyaline point of only 3 cells, $\times 400$. (6), (7) Capsules, $\times 17$. (8) Leaf-tip with typical hyaline point, $\times 200$. (9) Cells of leaf-middle, $\times 400$. (10) Cross section of leaf-margin near tip, $\times 400$. (11) Capsule, $\times 17$. (12) Cells of leaf-base, $\times 17$. (13) Cross section of leaf-margin in upper part, $\times 550$.

7. RHACOMITRIUM MACOUNII Kindb. Bull. Torr. Bot. Club 16: 93. 1889. [*R. alternatum* C. M. & Kindb.; *R. robustifolium* Kindb.]

Plants green to brownish or blackish. Stems up to 7 cm. long; elongated branches few or none, short tuft-like lateral branches none or occasional. Leaves ovate-lanceolate; when dry loose, crispate, nearly erect; when moist recurved; apex obtuse to acuminate; hyaline tip none, or short and smooth; margin of opaque portion entire, 2 cells thick toward the apex, erect on one side, erect or revolute on the other; costa extending to the apex or nearly so. Cells somewhat sunken over the lumen; those near the leaf-tip isodiametric; those of the leaf-middle a little longer than wide; those of the leaf-base linear, sinuose; lower marginal row quadrate to rectangular, some of them hyaline. Seta twisted to the right, about 5 mm. long, smooth, straight, or nearly erect and contorted. Capsule oblong, dark brown, not striate; its body about 1.8 mm. long. Peristome-teeth orange to brown, perforate or cleft to below the middle, smooth, about .26 mm. long.—British Columbia to Oregon.

An examination of co-type material kindly lent by Professor J. M. Macoun shows that the leaf-margins are two cells thick near the tip instead of 1 cell thick throughout as described by Kindberg. Also the leaves are hardly smooth; the surface is quite sunken over the cell cavities. The larger plants usually show fewer recurved leaves when dry, and constitute what is known as *R. robustifolium*. But the leaf and capsule characteristics agree very closely. Here is referred Macoun's number 245 from Mt. Arrowsmith, Vancouver Island, and distributed as *R. robustifolium*.

8. RHACOMITRIUM AFFINE (Schleich.) Lindb. Acta Soc. Sci. Fenn. 10: 552. 1875. [*R. alopecurum* Brid.; *R. heterostichum alopecurum* Huebn.; *R. obtusum* Brid.; *R. affine obtusum* Limpr.; *R. heterostichum gracilescens* B. S. G.; *Grimmia obtusum* Lindb.]

Plants green to yellowish brown. Stems up to 5 cm. long; elongated branches few, short tuft-like lateral branches many. Leaves lanceolate, nearly smooth, recurved when moist; apex obtuse to acuminate, mucous to hyaline-pointed; margin denticulate along hyaline point, otherwise entire, 2 cells thick toward tip. Cells of leaf-tip mostly isodiametric although some longer, of the leaf-middle rectangular, of the leaf-base linear; alar cells few, small, isodiametric; vein disappearing somewhat below the apex. Dioicous. Calyptra somewhat rough on the beak. Seta 4–6 mm. long, twisted to the right. Capsule 1.7–2.4 mm. long, cylindric; lid $\frac{1}{4}$ – $\frac{1}{2}$ the length of the capsule-body; annulus of 2–3 rows of cells. Peristome-teeth .25–.32 mm. long, densely papillose, divided to below the middle into 2 divisions.—Alaska to Washington.

The lack of hair points on some plants does not seem to warrant a variety. The gradation is close. It is very likely that the amount of hyaline tip depends upon the conditions under which the plant is growing; apparently drought favors more and longer hyaline tips.

Here are referred Macoun's number 98 from Unalaska, Alaska, and his number 622a from Nova Scotia.

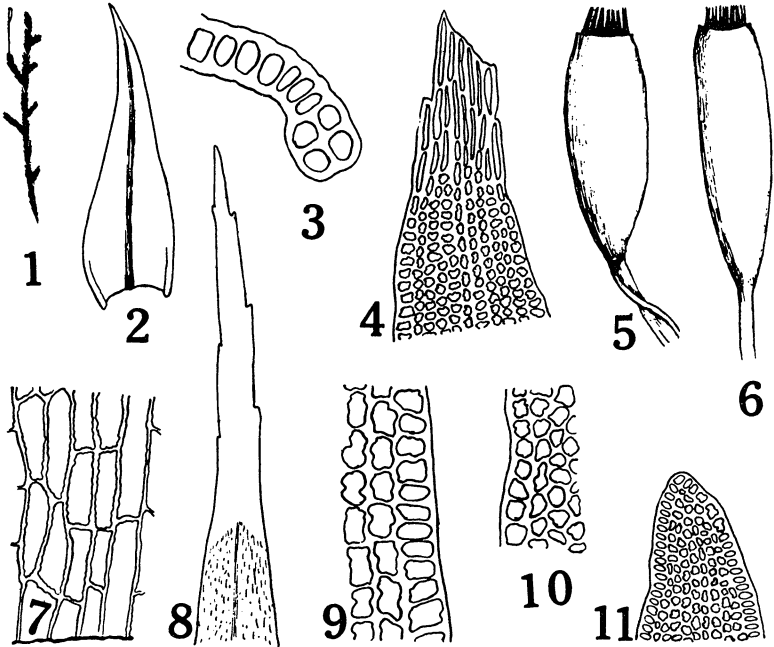


PLATE VI

Rhacomitrium affine. (1) Plant, $\times 1$. (2) Leaf, $\times 17$. (3) Cross section of leaf-margin near tip, $\times 550$. (4) Leaf-tip, $\times 200$. (5), (6) Capsules, $\times 17$. (7) Cells of leaf-base, $\times 400$. (8) Leaf-tip showing one of the longer hyaline points, $\times 100$. (9) Cells of the leaf-middle, $\times 400$. (10) Cells from near leaf-tip, $\times 400$. (11) Leaf-tip, $\times 200$.

9. RHACOMITRIUM VARIUM (Mitt.) L. & J. Manual Mos. N. Amer. p. 150. 1884. [*R. canescens lutescens* L. & J.; *R. speciosum* R. & C.; *R. oreganum* R. & C.]

Plants dirty-green to yellowish-green, rather coarse. Stems up to 5 cm. long; elongated branches none to few, short tuft-like lateral branches none to many. Leaves lanceolate, muticous or hyaline-pointed; muticous ones obtuse, entire; hyaline point short, somewhat denticulate, usually present on upper leaves of branches but sometimes wholly lacking throughout the plant; margin 1 cell thick throughout. Upper opaque cells 1-4 times as long as wide, most of them elongated in the leaves having hyaline points; middle and basal cells 1-2 times as long as wide. Dioicous. Calyptra long-subulate, slightly rough at apex. Seta 10-14 mm. long, twisted to the right, smooth. Capsule cylindric, erect, smooth, somewhat plicate when very old; body 3.3-3.8 mm. long; lid nearly as long; annulus of 3 rows of cells. Peristome-teeth nearly smooth, 1.5-1.7 mm. long. Spores 12-18 μ .—Alaska to California.

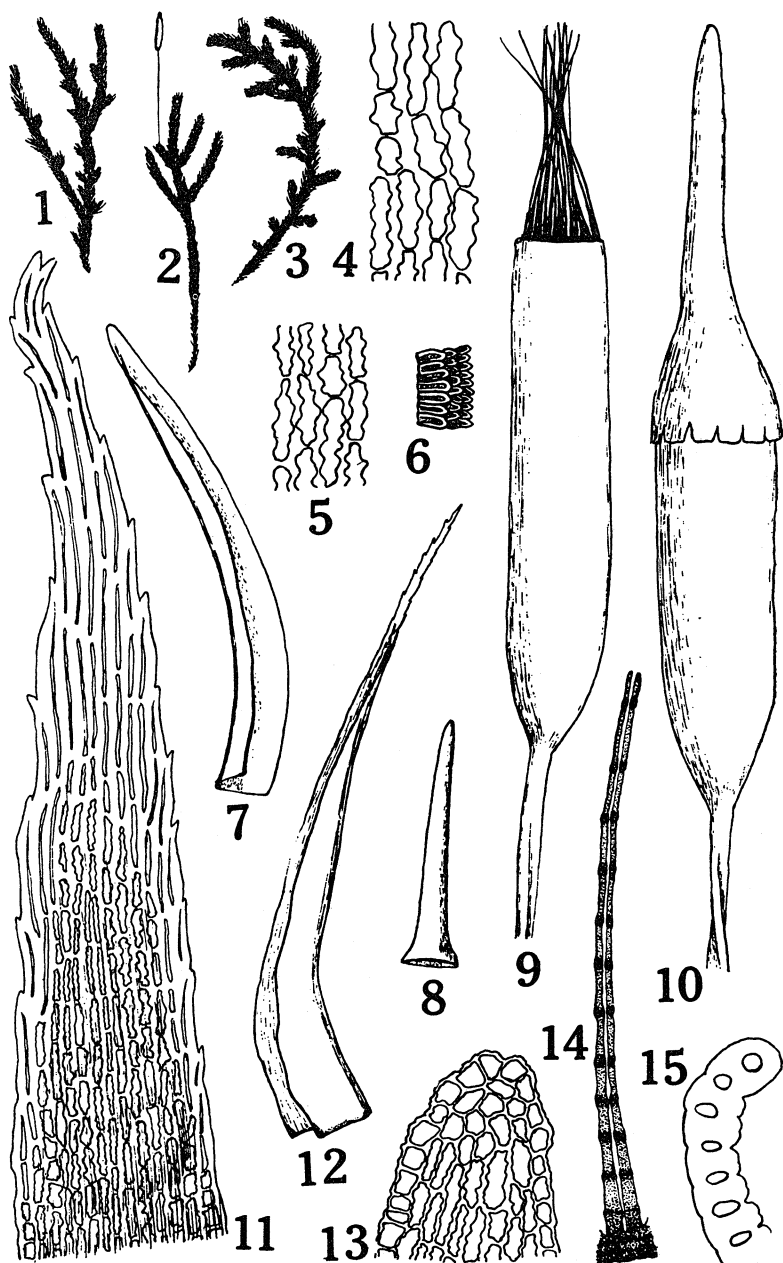


PLATE VII

Rhacomitrium varium. (1), (2), (3) Plant, $\times 1$. (4) Cells of leaf-base, $\times 400$. (5) Cells of leaf-middle, $\times 400$. (6) Annulus, $\times 105$. (7) Leaf, $\times 25$. (8) Lid, $\times 17$. (9), (10) Capsules, $\times 17$. (11) Leaf-tip, $\times 300$. (12) Leaf, $\times 25$. (13) Leaf-tip, $\times 400$. (14) Split tooth of peristome, $\times 400$. (15) Cross section of leaf margin near tip, $\times 400$.

The longer plants are the most yellowish, but there is a gradual gradation. Some plants have many tuft-like lateral branches but most of them have several. Most plants have hyaline points on the leaves at the branch-tips, but some have all of the leaves muticous. The striking characteristic is the long capsule. The variability of the species has been the cause of considerable confusion in our western *Rhacomitrium*s. The cells of the marginal row near the leaf-tip are isodiametric, so are also often a few cells in the tips of the muticous leaves; but otherwise opaque cells of the leaf-tips are nearly all 2 or more times as long as wide. This has been confusing in keys based on leaf-cells. C. Mueller was in error in reporting the annulus lacking.

10. RHACOMITRIUM CANESCENS (Weis) Brid. Mant. p. 78. 1819.

Plant yellowish-green or grayish-green. Stems up to 10 cm. long; elongated branches none to few, short tuft-like lateral branches none to rather numerous. Leaves lanceolate, papillose on both sides, usually most of them with hyaline points; hyaline point papillose, dentate, up to half the length of the leaf; papillae not paired, over the cell-cavity; margin 1 cell thick throughout. Green cells of the leaf-tip 1-2 times as long as wide, of the leaf-middle scarcely longer, of the leaf-base 4-6 times as long as wide. Dioicous. Calyptra very warty. Seta 7-25 mm. long, smooth, twisted to the left. Capsule elliptic, about 2 mm. long; lid as long as or longer than the body of the capsule. Peristome-teeth 1.3-1.6 mm. long, finely papillose, split to the base. Spores 8-10 μ .

10a. RHACOMITRIUM CANESCENS ERICOIDES (Web.) B. S. G. Bryol. Eur., Fasc. 25-28, 1845. [*R. ericoides* Brid.]

1. Most of the leaves with hyaline points.
2. Plants yellowish green.
3. Short tuft-like lateral branches very numerous.—Alaska to Oregon and Montana.

TYPICAL.

1. Most of the leaves with hyaline points.
2. Plants green, not greatly yellow.
3. Short tuft-like lateral branches not very numerous.—Alaska and Yukon to California and Montana

10b. RHACOMITRIUM CANESCENS EPILOSUM Milde, Bryol. Siles. p. 160. 1869. [*R. canescens muticum* Vent.; *R. canescens muticum* Kindb.]

1. None of the leaves with hyaline points, or a few with very short ones.
2. Plants green, not greatly yellow.
3. Short tuft-like lateral branches not very numerous.—Alaska to Washington.

Macoun's descriptions of *Rhacomitrium canescens muticum* do not agree. In Bull. Torr. Bot. Club 17: 272, 1890, the costa is said to be wanting; in Cat. Canadian Pl. 6: 77, 1892, the costa is said to be excurrent. Examination shows it to be excurrent in the longest leaves, and not reaching the apex in the shorter ones. There is nothing in the description to separate it from *R. canescens epilosum* Milde; and while material of *R. canescens epilosum* has not been accessible, it is very likely that it is the same as Kindberg's var. *muticum*.

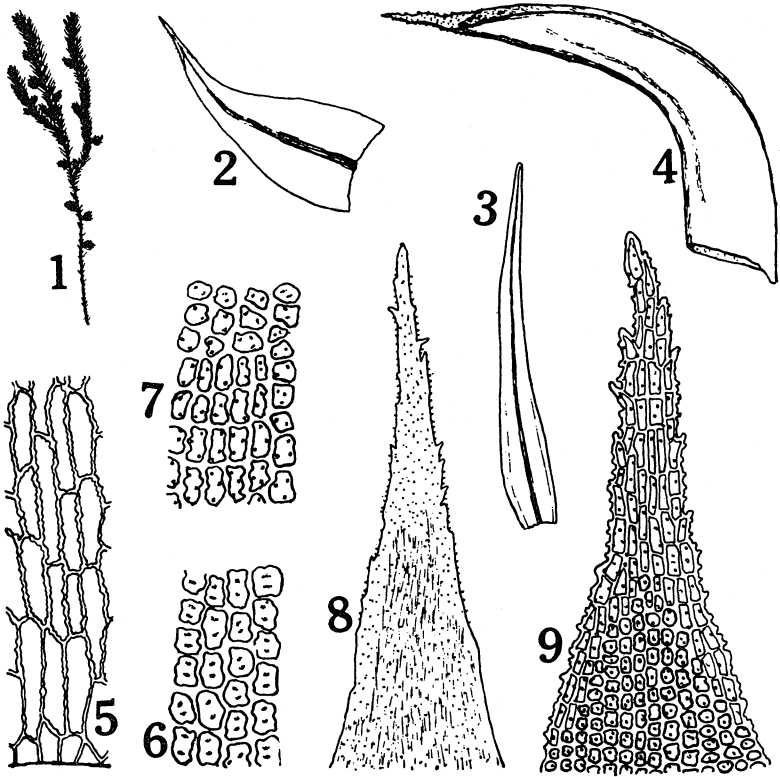


PLATE VIII

Rhacomitrium canescens. (1) Plant, $\times 1$. (2), (3) Leaves, $\times 17$. (4) Leaf, $\times 25$. (5) Cells of leaf-base, $\times 400$. (6) Cells of leaf-middle, $\times 400$. (7) Green cells of leaf-tip, $\times 400$. (8) Leaf-tip, $\times 105$. (9) Leaf-tip, $\times 200$.

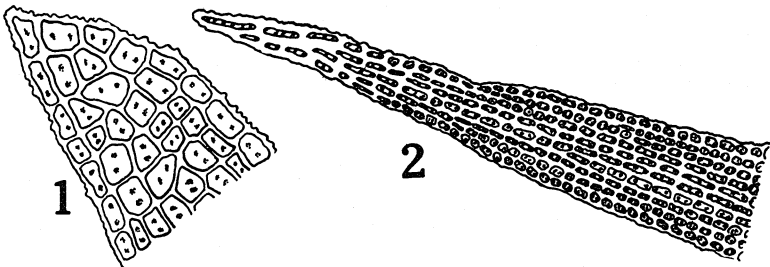


PLATE IX

Rhacomitrium canescens epilosum. (1) Tip of rather blunt leaf, $\times 400$. (2) Tip of rather pointed leaf, $\times 200$.

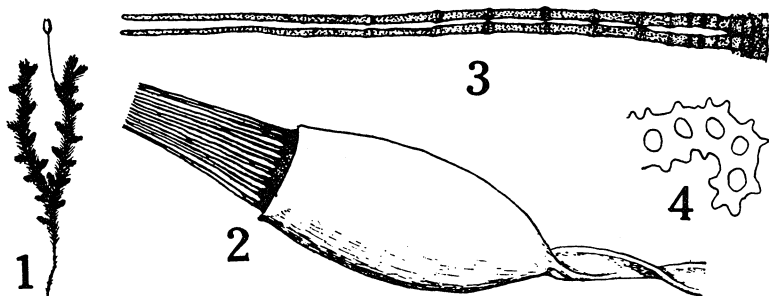


PLATE X

Rhacomitrium canescens ericoides. (1) Plant, $\times 1$. (2) Capsule, $\times 23$. (3) Peristome-tooth, cleft, $\times 80$. (4) Cross section of leaf-margin just below hyaline tip, $\times 400$.

II. RHACOMITRIUM LANUGINOSUM (Ehrh.) Brid. Mant. p. 79. 1819. [*R. hypnoides* Lindb.]

Plants green to grayish green. Stems up to 20 cm. long; short tuft-like lateral branches many, or else these elongated so there are many elongated branches. Leaves lanceolate, up to 5 mm. long, often secund, loosely appressed when dry, recurved when moist, hyaline pointed; hyaline point long, papillose on both surfaces, erose; margin only 1 cell thick throughout. Green cells of the leaf-tip 3-8 times as long as wide except the isodiametric marginal row, those near the hyaline cells papillose, the others merely sunken over the cell cavity; cells of the leaf-middle 4-8 times as long as wide, of the leaf-base 6-10 times as long as wide. Dioicous. Calyptra somewhat rough at beak. Seta 3-7 mm. long, rough toward the base, twisted to the left. Capsule ovate, its body about 1.5 mm. long, smooth; annulus of 4-5 rows of cells; lid about 1 mm. long, straight, red. Peristome-teeth split almost to base, up to .9 mm long, very papillose, not swollen at the joints. Spores $9-12\mu$.—Alaska and Yukon to Oregon and Idaho.

12. RHACOMITRIUM MICROCARPUM (Schrad.) Brid. Mant. p. 79 (in part), 1819. [*R. ramulosum* Lindb.; *R. heterostichum microcarpum* Boul.]

Plants light-green to blackish-green or brownish. Stems up to 5 cm. high; elongated branches few, short tuft-like lateral branches many. Leaves loosely appressed when dry, divergent or somewhat recurved when moist, lanceolate; hyaline point present on nearly all leaves, short or long; margin only 1 cell thick throughout. Cells convex on the leaf-surface, more so on the upper side; green cells near the hyaline tip 2-5 times as long as wide, gradually longer toward the leaf-base; modified alar cells often 1-2 rows, hyaline, square or short-rectangular. Dioicous. Calyptra somewhat rough at tip. Seta 4-5 mm. long, twisted to the right. Capsule cylindric, its body 1.8-2.1 mm. long, yellowish to brownish; lid with somewhat diagonal beak, almost half as long as the capsule-body. Peristome-teeth up to .6 mm. long, finely papillose, yellowish-red,

divided nearly to base into 2 parts. Spores 10-14 μ .—Alaska and Yukon to Oregon and Montana.

In very dry situations the hyaline points are sometimes much longer than the typical eastern form.

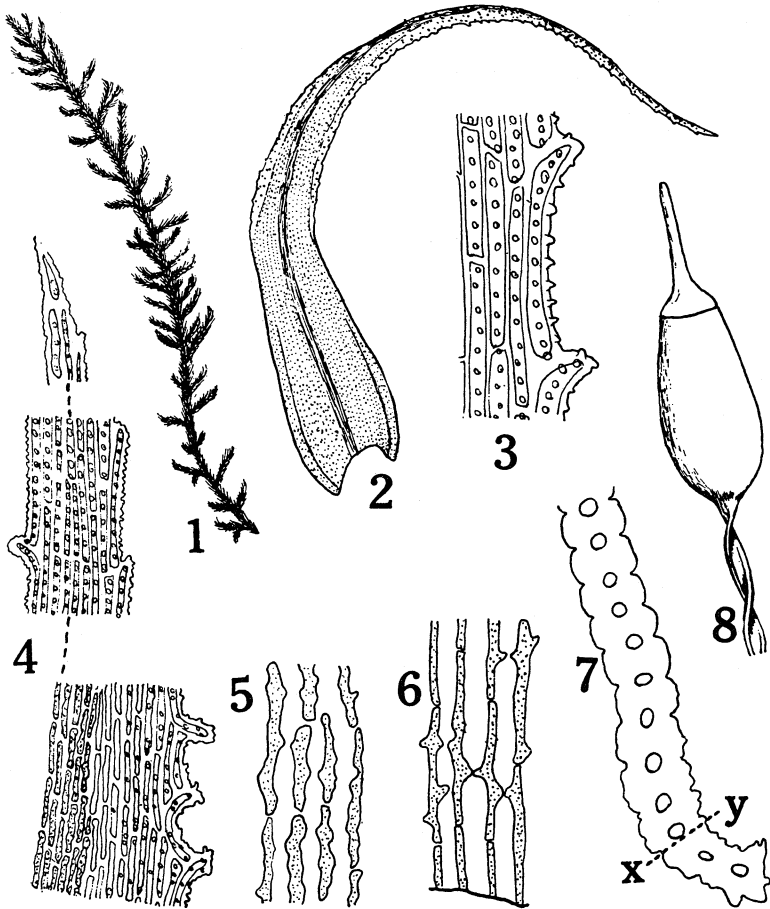


PLATE XI

Rhacomitrium lanuginosum. (1) Plant, $\times 1$. (2) Leaf, $\times 17$. (3) Margin of hyaline leaf-tip, $\times 400$. (4) Parts of leaf-tip, $\times 200$. (5) Cells of leaf-middle, $\times 400$. (6) Cells of leaf-base, $\times 400$. (7) Cross section of leaf-margin at base of hyaline tip; xy, boundary line between green and hyaline portions, $\times 550$. (8) Capsule, $\times 17$.

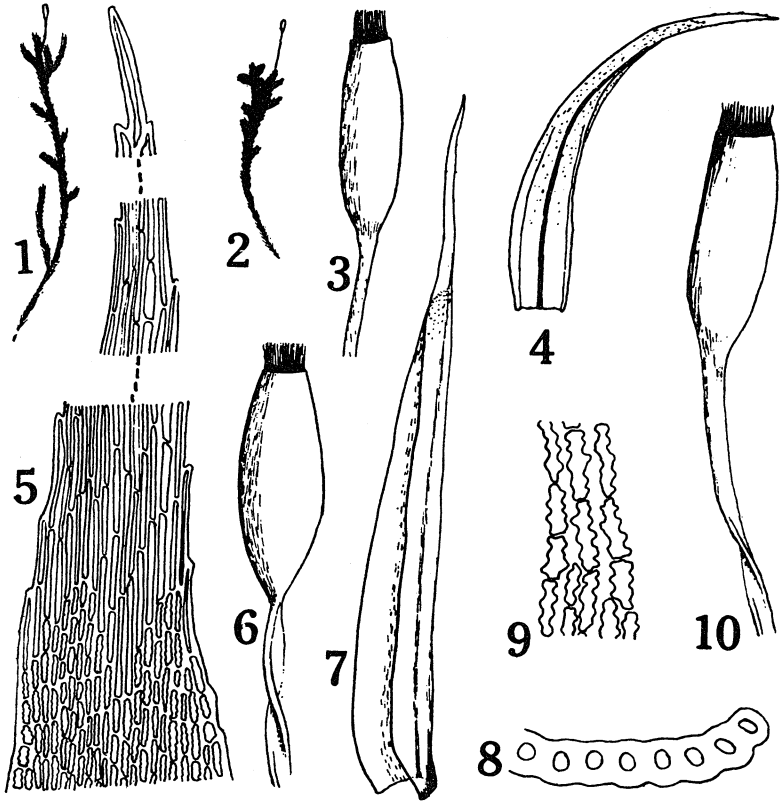


PLATE XII

Rhacomitrium microcarpum. (1), (2) Plants, $\times 1$. (3) Capsule, $\times 17$. (4) Leaf, $\times 17$. (5) Parts of leaf-tip, $\times 200$. (6) Capsule, $\times 17$. (7) Leaf, $\times 17$. (8) Cross section of leaf-margin near hyaline point, $\times 550$. (9) Cells of leaf-middle, $\times 400$. (10) Capsule, $\times 17$.

13. RHACOMITRIUM PALMERI Kindb. Rev. Bryol. 23: 19. 1896. [*R. microcarpum palmeri* Kindb.; *R. tenuinerve* Kindb.]

Plants densely tufted. Stems 2–3 cm. long; elongated branches none or few, short tuft-like lateral branches none to few. Leaves blackish to yellowish-green when dry, keeled, hardly papillose, nearly smooth, long-pointed, the upper faintly crisped when dry; hyaline point wholly lacking in all the leaves; margin entire, 1 cell thick throughout; vein faint, vanishing far below the apex. Cells narrow, 2–8 times as long as wide; alar cells large, rectangular. Seta mostly immersed, about 5 mm. long, twisted to the right, smooth. Capsule-body 1.4–1.5 mm. long, oval, about .6 mm. wide. Peristome-teeth deeply cleft, about .25 mm. long.—Alaska and British Columbia.

palmeri	microcarpum	fasciculare	aciculare	depressum	heterostichum	affine	macounii	sudeticum	cyclodictyon	vatium	lanuginosum	canescens	patens
n	n	n	n	n	n	n	n	n	n	n	n	n	r
r	r	r	r	r	r	r	r	r	r	r	r	r	r
n	n	n	n	n	n	n	n	n	n	n	n	b	n
m	t	t	t	t	t	t	t	t	t	t	t	t	t
1.4 to 1.5	1.8 to 2.1	2. to 2.4	2. to 2.6	2.2 to 2.6	2. to 2.4	1.7 to 2.4	1.8 to 2.4	1.2 to 1.5	3.3 to 3.8	1.5 to 1.8	1.5	2. to 2.8	1.6 to 2.8
l	l	l	i	i	i	i	i	i	i	l or r	l	i or l	i
g	g	g	g	g	g	g	g	g	r	g	g	g	g
l	l	l	l	l	l	m	m	m	l	l	l	l	m
	a				a	b	b	a		a	a	a	
n	h	n	n	n	h	h or n	h	h	n	h or n	h	h or n	h or n
a		a	r	b		b	b		b	b		a	a or b
f	m	m	o or f	o or f	f	m	o or f	o or f	o	o or f	m	f or m	o

Leaves with (r), or without (n), longitudinal ridges on vein beneath ?

Seta twisted to the left (l), or to the right (r) ?

Green cells papillose on both sides (b), or on neither (n) ?

Leaf-vein ending near the middle (m), or near the tip (t) ?

Length of capsule-body in mm. ?

Green cells near leaf-tip isodiametric or nearly so (l), or longer (i) ?

Plants reddish (r), or green to blackish (g) ?

Leaf-margin one (l), or more than one (m), cells thick toward tip ?

Hyaline leaf-tips acute (a), or blunt (b) ?

Some (h) or no (n) leaves of branch-tips with hyaline points ?

Muticous leaves of branch-tips rounded (r), or blunt (b), or acute (a) ?

Short tuft-like lateral branches none (o), or few (f), or many (m) ?

This table is a key and comparison when used horizontally, beginning at the top.

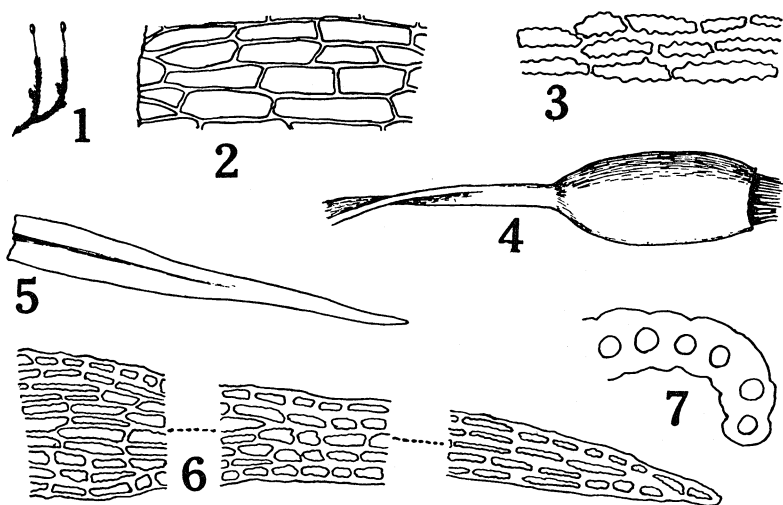


PLATE XIII

Rhacomitrium palmeri. (1) Plant, $\times 1$. (2) Cells of the leaf-base, $\times 400$. (3) Cells of the leaf-middle, $\times 400$. (4) Capsule, $\times 17$. (5) Leaf, $\times 17$. (6) Parts of leaf-tip, $\times 250$. (7) Cross section of leaf-margin near tip, $\times 550$.

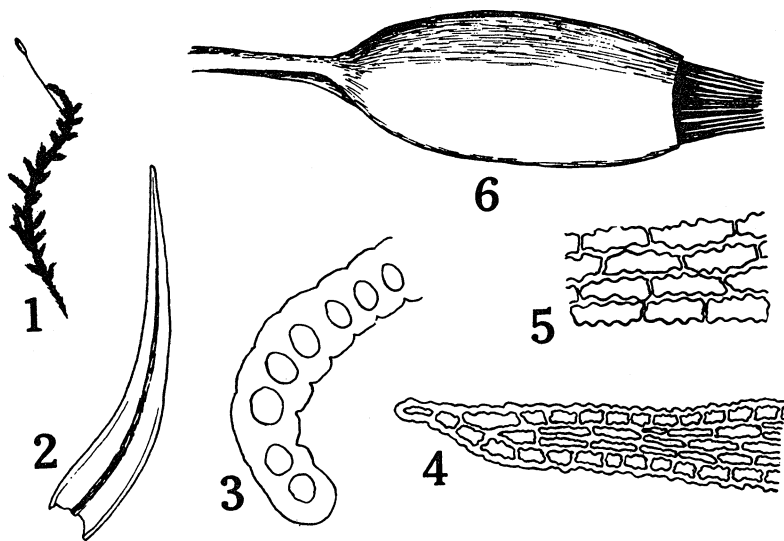


PLATE XIV

Rhacomitrium fasciculare. (1) Plant, $\times 1$. (2) Leaf, $\times 17$. (3) Cross section of leaf-margin near apex, $\times 550$. (4) Leaf-apex, $\times 200$. (5) Cells of leaf-middle, $\times 400$. (6) Capsule, $\times 17$.

14. *RHACOMITRIUM FASCICULARE* (Schrad.) Brid. Mant. p. 80. 1819.

Plants dirty-green or brownish. Stems up to 12 cm. long; elongated branches none to several, short tuft-like lateral branches numerous. Leaves lanceolate, without hyaline point, gradually narrowed to a blunt tip; margin 1 cell thick throughout; vein extending to within a few cells of the apex; surfaces somewhat sunken over the cell-cavities. Upper leaf-cells 3-4 times as long as wide, middle and lower ones 4-6 times. Dioicous. Calyptra rough throughout. Seta 4-12 mm. long, twisted to the right. Capsule-body 2-2.4 mm. long; lid $\frac{2}{3}$ the length of the capsule-body. Peristome-teeth .6 mm. long, split into 2 parts nearly to base, densely papillose. Spores 12-16 μ .—Alaska and Yukon to Washington and Montana.

Limpriht in Rabenhorst's *Kryptogamen-Flora* says the seta is twisted once to the left just below the capsule. The material examined showed no twist to the left.

UNIVERSITY OF WASHINGTON,
SEATTLE, WASH.

NOTES ON RECENT BRYOLOGICAL LITERATURE

Dr. Alexander W. Evans¹ has recently revised the hepatic genus *Herberta*, giving a short historical sketch, a discussion of the morphology, and a critical revision of the species. Of the four species recognized, two, *H. adunca* (Dicks.) Gray, and *H. Sendtneri* (Nees) Evans, are wholly European, while *H. Hutchinsoniae* (Gottsche) Evans, and *H. tenuis* Evans occur in North America. All the species are fully figured.

In the November issue of the *Torrey Bulletin*² a new hepatic, *Lejeunea minutiloba*, is described and figured. Its nearest relatives are *L. floridana* Evans and *L. glaucescens* Gottsche. The author states that the new species is to be expected in Florida and Mexico.

We clip the following from *Science*. N. S. xlv. Nr. 1197: "The eighth number of the *Proceedings of the National Academy of Science* contains . . . *Growth of Isolated Sporophytes of Anthoceros*: Douglas Houghton Campbell, department of Botany, Leland Stanford University. The young sporophyte of *Anthoceros Pearsoni*, separated from its association with the gametophyte, is capable of limited growth in length and is able to mature normal spores and elaters from the young sporogenous tissue."

Sr. Machado,³ whose work we have already noticed, contributes to the last issue of *Broteria* a running account of the bryology of the Sierra Estella and of the Sierra Geres, with a list of 100 mosses and 5 hepatics. In the same issue Father

¹ Alexander W. Evans. Notes on the Genus *Herberta*, with a Revision of the species known from Europe, Canada, and the United States. *Bull. Torr. Club.* 44. 191-222. *pl. 8. figs. 1-29.* (Ap. 1917).

² Alexander W. Evans. A new *Lejeunea* from Bermuda and the West Indies. *Bull. Torr. Bot. Club.* 44: 525-528. *pl. 24.* (Nov. 1917.)

³ Antonio Machado. *Notas de Briologia Portuguesa.* *Broteria.* 15: 49-63. (Aug. 1917.)